Notebook, N-10-08-22

Remington Co.,
MFG. STATIONERS,
69 FULTON STREET,
NEW YORK.
40613

029.4

Edison Laboratory

Book No 2 Small Record

Experiments upon paper

Foundation Cylinder Removals

From Aug 22nd 1910

Moulded Blanks #8-19-10

Will be numbered #8-22-10

Rec'd. P.M. AUG 22 1910

Placed 500 lbs 2 minutes

+ 1400 until cool

Moulded 2 Blanks # 8-17-10

The Matrix was made hotter than the blank the blank only warm enough to under the dope plastic a little. Just as the finger would can indament it - 500 lbs pressure for 1 minute then up to 1200 lbs until cool - the two records were perfectly smooth one of them contained some cracklels on the plain point.

Melted Edison Dope # 372 and filtered in Vacuum device Coated 7 blanks will be numbered #8-22-10

3

Rec'd. P.M. AUG 22 1910

1

Moulding Blanks #8-22-10
3
Will be Numbered #8-23-10
1

Entd A.M. P.M.
AUG 23 1910

Blank #8-22-10 heated in oven over Steam Coils 90 lbs Temp about 225° for three Hours. These Blanks will be Numbered #8-23-10
1A
Moulded 1 Record same Number

Made 10 Blanks with Edison Dope # 374
Will be Numbered #8-23-10
3

Entd A.M. P.M.
AUG 23 1910

Works best at 290° F. Temp. No Cold air. It chills quick enough without it. Difficult to keep the Dope from Bubbling.

Made 14 Blanks with Edison Dope # 373
Will be Numbered #8-23-10
2

Entd A.M. P.M.
AUG 23 1910

Moulding Blanks #8-23-10
1A
Will be Numbered 8-24-10
1

Entd A.M. P.M.
AUG 24 1910

Pressure 500 lb per Square Inch 12 to 15 minutes to cool, apply Cold air with Electric Fan.
Moulded 5 Records Every one Good.

Rec'd A.M. AUG 24 1910

Put 3 blankets # B 8-23-10 in Steam table oven temp 275°F. for 4 hrs. these will be numbered B 8-24-10

These Blankets after heating were rubbed to polish again, & Pressed Rebecca mill Number B 8-24-10 2 A

Rec'd A.M. AUG 24 1910

Pressing Blankets # B 8-23-10 Heated blankets in steam table Making to temp. of 275°F. apply Elec. fan to cool the blankets once then through shuddles these will be Numbered B-24-10 3

Rec'd A.M. AUG 24 1910

Pressed one Record coated as # B-23-10 upon a table covered with 1½ layers of Paper # B-24-10, Coating was too thin, the overlap of the Paper shows

Rec'd P.M. AUG 24 1910

Pressed Blankets # B 8-23-10 Blank heated little, Mostly little more say about 150°F. Pressure 500 for 1 minute 1000 for another min. 1500 the for until cool by Elec. Fan These will be numbered # B 8-24-10

Made 19 Blanks with Paul's Dope #378. Filled the dope in Vacuum But the Letters Run open in all probability. Some ain't ground [illegible] Strength. The dope works good at 230°F without air cooling But with it the Charge should be quickly and [illegible] 300° [illegible] all of the 19 Blanks look good enough to make good Records, But all of them are not perfectly smooth. These Blanks will be Numbered 8-24-10 6

Received Aug 24 1910 M.

Record one record will be 8-24-10 Blank was not perfect, and the 1 Record is good

Moulding Blanks # 8-24-10 6

The Records will be numbered # 8-25-10 1

Received Aug 25 1910 M.

These Records appear to be of good quality. they would Smooth, are Hard enough. No Blisters

Made Four Blanks with Paul's Dope, No Gommar Produced a mass that was too thick to coat Blanks. added considerable Resin. this made it Little Thinner, but too brittle. would chill so quick that it would not cement itself to the paper tube. Then added Glycerol enough to make Record that made it also too brittle. Then added Sulfur. this seem to thoughen it. will try again

Received Aug 25 1910 M.

Ent'd AUG 26 1910 .M.

Records No # 8-15-10 & 8-15-10 1A

they have assumed a Rough surface, enough to condemn them for commercial purposes, a white grist-like substance has appeared on the surface.

Remoulded Rec. # 8-25-10, as follows Placed Record in Steam-table-oven for 20 minutes, temperature 225°F. the dope becomes soft enough to dispose the recording. The Motive is only moderately drawn say about 150° and press 500 lbs for 1 minute & 1000 lbs for another minute & 1500 lbs for a third one. this will be Numbered 8-26-10 1

Ent'd AUG 27 1910 .M.

Coated Blanks with Paul's Dope, First the Dope is composed of 1 Part Elsworth's Resin and 2 Parts of Chloride of Lead, this was too thick to work well, added Phenol to make fluid & coated 2 Blanks, Pressed one Record, was very Rough surface, then added Shellac & more Phenol, coated two more Blanks & Pressed Record the addition of shellac showed some improvement in the way of surface quality, added more shellac & Phenol until the compound reached the quality of not hardening any more. None of the Samples were of good enough quality to produce Commercial Records. The Resin has not the same contraction as the Shell and after the Dope is cured it assumes a grey white surface.

Moulded Blank # 8-19-10
will be Rec. # 8-29-10
1

Entd A.M.
AUG 29 1910

Special 2 minutes
Blank # 8-16-10 Sand paper end
down to size + moulded
Record No 8-29-10
2

8-23-10 R. 8-29-10
2

B. # 8-16-10 R. 8-29-10
2

Moulded Blank # to 8-24-10
Rec. # 8-30-10
4
1

Entd A.M.
AUG 30 1910

Made 6 Blanks for 2 minutes Records with Dope # 392 chilled in cold water, then melted to 280° F. works good, the blank surface after it is set has a matte surface & also little uneven contraction. These will the tubes used for these were once coated and afterward stripped off. These will be numbered B 8-30-10
2

Made 4 Blanks same as above for 4 min Records, Coated & Rolled to finish. These will be Numbered B 8-30-10
3

Made 9 Blanks same as above except that they were not Rolled to finish. These will be Numbered B-8-30-10
4

Made 5 Blanks with Die Supa #365A chilled in water & reinstated to 280° for cooling.

Rec'd AUG 30 1910 .M. work and Blank surface after cooled & Rel does not have perfectly flat surface. it is not matte but sort of wrinkled. probable due to uneven contraction These were Coated & Rolled to Turned Title Ends.

These will be numbered B-8-30-10 5

Made 6 Blanks same as above except That they are for 4 inch Rounds & also They have not been Rolled to polish They show a little frosty matter on the surface, otherwise they look pretty good These will be numbered B-8-30-10 6

Dimension of Blanks for Matrix #8398

Title End 2.155" Centre 2.164 End 2.158

Matrix #9885

Title End 2.156 . Centre 2.165 End. 2.159

Put in Steam table over night

Blanks B-8-30-10 R.8-31-10 4A

Blanks B.8-30-10 R.8-31-10 4A End .M. AUG 31 1910

" B.8-30-10 R.8-31-10 2A

" B 8-30-10 4A R.8-31-10 4A

Moulding Blank #B 8-30-10 2 O.K.

These Blanks requires a higher temp to make Matrix as dought to mould. Makes very good Blend Record 8-31-10 is O.K.

" 8-31-10 2 O.K. Matrix little Rough.

Moulded Blank # 8-26-10
C
After being in Steam-table
Rec'd
SEP 1 1910
A.M.
over for Shrinkage, about
700°. Will moulds. 9-1-10.
the blank was sand-papered to level-off
or make surface smooth without depressions
and heated again to render plastic.

Moulded Blanks 8-30-10, Heated
Blanks white. The color is Brown.
The Matrix forty Shots, Pressure
800 lbs for 1 Min. Then for another
Minute of time on Cold air
R 9-1-10
2

R 8-30-10 in oven 200° Temp. for
two Hours. Cooled & Sand papered to
Size & in oven again Temperature
200°. to make plastic. Moulded
Records which split open. That was
due to applying pressure too suddenly
or that the tube was once expanded
to make record. The surface of
this Record is Smooth & Hard. Keeping
for further assurance of Soundness. with
Number R 9-1-10
3

8-30-10
3 and

Moulded 4 Blanks 8-30-10 one
was Rolled after cooled 4th other was
not Rolled. Both was Heated in oven
for 10 minutes, Matrix was moderately
hot. pressure was 800 lbs for 1 min
4 1/2 lbs for another Min. Then time on
the cold air 5 min. Used the Same Matrix.
the Rolled Blank Extracted Letter easier
8-30-10 is the Rolled Blank, it was
not quite as plastic as the other, played
them both and could not detect any
difference of surface over Volume
of Quality. Both were good enough for
Commerce, except the 8-30-10 had
2 air Spots. and will be numbered
9-1-10 the other 9-1-10
4

Repeated above Experiment, with another
Matrix # 4-M-12224. Result was Same, both
have air Spots. probably due to the Blank
not having Blanks enough. R. 9-1-10 Y.
6 4

Repeated again with still another Matrix
which has little more taper, the
Blank was made better pattern also the Matrix

over

[15]

Moulded 2 Blanks 9-30-10
6
Heating 8 minutes, Plastic
Ent'd .M. Enough when color begins
SEP 1 1910 to change Mothiy 120° Hot
Pressure 500 lb for 1 mi 1200 for
another 2 mi then turn on cold
air for 5 mi. The 2nd Record got stuck
on the mathix. the 1st is OK # 9-1-10
8
Moulded 2 more with another Mothix
End measurement 2.190" & Blank 2.180
1st Record Extract fine and the 2nd
also. Will Number 9-1-10 both
9
are Very good in every way —
Reno —

Moulded 2 Blanks 9-30-10
6
with "Reno" Mothiy which
measures at large End 2.190" & Ent'd .M
Little End 2.180", the Blank SEP 2 1910
measures .010" smaller. Method of moulding
the Blank is heated only slightly
not enough to discolor the dope, the
mothiy is made about 180° F. pressure
500 for 1 mi & 1200 for another mi.
then turn on cold air for about 4 mi
more the record Extracts. Result. The
Record shows two air Spots, this
will be numbered 9-2-10
the next blank was operated on the
same except the pressure which was
500 for 2 mi 1200 for another 1 mi.
& 1600 then turn on cold air.
did not extract quite as easy,
and show some air spots this will
be numbered 9-2-10
2

Made Blanks with Edison Dye # 374A. Coated Not Sprayed. Rubbing. [illegible] Then Coated. [illegible]

Rec'd SEP 3 1910 .M.

Made Blanks of Edison Dope # 374A-8 & filtered Linseed Gum. 2 oz The Gum was added with intention to prevent Bubbling it did so very considerably but it still contained some. The Coating works well and seems hard enough. The Blanks will be Numbered 7-6-10 Annulated Rearcoated will number 7-6-10 2

Rec'd SEP 6 1910 .M.

Entd .M. SEP 7 1910

Tried Daily's Dope # 4HA an old-Gold-Color mass. it would not melt to a liquid

Started work upon Large Cylinder See other Book!

Entd .M. SEP 8 1910

Moulded Blanks # 9-30-10 the Records will be 6 numbered 9-9-10

Record Perfect except 4 cm air spots on Blank surface.

These Blanks have not been Rolled and have now stood 10 hours for 8 days, have heated them in oven only enough to be barely plastic the Matrix was made little hotter. the Result is an excellent surface. the pressure is 500 for ½ mi - 1200 for 2 mi - now 1600 until cooled with Elec. Fan.

9-8-10 1B moulded same as above Record Perfect. Have compared just now with a regular wax record that was moulded yesterday from the same matrix. the wax Record does not reproduce quite as smooth as the proper Record.

9-8-10 1C Just as perfect as # 1B except 3 scratches caused by dust on edge of matrix which scraped the record when extracting.

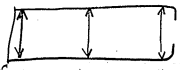
9-8-10 1D Just as good as above three

Pressed Blank # F-30-10
Record Number 4 9-8-10
Just as good as I.E.
Above four O.K.

Pressed Blank # F-30-10
Record Number 3 9-8-10
Just as good as above four I.E. O.K.

Pressed Blank F-17-10
Record Number 1 9-8-10 Record is perfect
I.C.

Pressed Blank F-16-10
2
Record Number 9-8-10
I.H. Record Good



Size of Matrices

	End	Center	End
Matrix "Play that Lovey Etc."	2.197	2.196	2.195
Blank	2.175	2.178	2.165
Difference	.022	.018	.030

Record Extracts easy.

Matrix "Reno"	2.192	2.186	2.174
Blank	2.172	2.172	2.161
Difference	.020	.014	.013

Records Extracts all right

Matrix "Reno"	2.192	2.186	2.174
Blank	2.172	2.172	2.168
Difference	.020	.014	.006

Record Extract all right

Matrix "Play that Lovey"	2.197	2.196	2.178
	2.174	2.172	2.165
	.023	.019	.013

Record Extracts all right

Matrix "Put on your Slippers"	2.191	2.184	2.174
Blank	2.174	2.175	2.163
Difference	.017	.009	.011

Record comes out little Hard

Entd .M.

SEP 8 1910

Matrix "March and Hamlan" 2.193 – 2.183 – 2.168

Blank	2.173	2.173	2.158
Difference	.020	.010	.010

Record Coarse and Little Hard

Matrix "Lady Bug" 2.198 – 2.198 – 2.176

Blank	2.178	2.178	2.168
Difference	.020	.020	.008

Record Drop out

Matrix "Lady Bug" 2.198 – 2.198 – 2.176

Blank	2.178	2.180	2.170
Difference	.020	.018	.006

Record Drop out

J-9-9-10

Paper tube wound with .003" V.E 616 paper 10½ layers after Dried in oven, temp 200° Entd .M. for 10 hours and then standing SEP 9 1910 in the open 3 weeks measures on outside Diameter 2.117", Length 4.1/64 when fresh wound and Rolled, measures 2.133 & 2.193 Thickness of Wall .032" + .035 when fresh .030 .4032 " air Dried – for two days – Oven drying does not alter the thickness of the Wall.

See next page for further dates.

Tubes wound on the 9-10th and left in the open will be Numbered JLG-9-10

Inspected all the Records that have been made since Aug 15th to the #345 A Dalby's Dope shows to be the most permanent.

SEP 12 1910

— Paper Tubes —

The Winding mandrils measures 4 9/64" long 9/16 Dia.

The Coating machine Harbors showed 2.1504 on this date they are 2.1510

The Tube Contracts .014" on the Dia.

Tubes wound and left in the open for two days then dried in oven temp. 200° for 8 hours. & let stand for two days more then Dip into shellac Solution containing some Yellow Ochre & Red Read in the object of this is to render the tube water proof sometime to get a saturation some what Rough that the Record coating may grip better it is intended, ready as a primer these tubes will be numbered

Tubes #1 9-15-10

(These tubes were again dried in oven after dip in Shellac. 20C.

1

Set Same as above Except that the tubes were not dried in oven before Dipping into shellac Solution, they were dried after dip. for about 3 hrs. will Number

Tube #2 9-15-10

2

SEP 15 1910

Lot of 12 tubes #7-9-9-10 Baked for 8 hrs. and left in the oven for 4 days and stored in Shellac Varnish and thickened with Precipitated chalk. Let stand 10 hrs. when oven then Baked in oven for 4 hrs. there will be numbered 7-9-17-10

Lot of 12 tub. #7-9-9-10. Stood in the Interior Varnish and dipped into Shellac. Removed above & Baked for 4 hrs. will be numbered 7-9-17-10

[78]

Suspected some Records that were on test for High-temperature.

The Method employed was that some ordinary Wax Records were put into box with some Paper Records, the box was placed over heated table — some distance away — so gauged that temperature of 110° to 112° F. was obtained This lot of Records have been standing temp. test since Sept 8th by being placed on shelf near cooking directly over steam table where temp. of between 80° & 95° was obtained

this higher temp test was begun 2 days ago. when they were heated warm at 110° for 5 hrs. and yesterday again for 8 hrs. The result in Record # 9-1-10 9 became plastic enough to be marked by the wax Record cleaning against it. The wax was not marked. over

but the surface was not altered much. The corresponding on the plate showed that the wear Record to have assumed a rougher surface than the paper Record of which is still in good enough to be Commercial Tape # 365 A

Record # 9-7-10 Same report Tape # 365 A as the above.

Record # 8-31-10 Does not show any change from what it was without first put to test, Tape # 374

8-25-10 shows to have assumed a little smoother surface and also flatter wear it seemed against the sides of the needle Tape # 378

8-31-10 6A remained same as when put on Tape # 365 A

R. 9-8-10 Remained same as when first put to test Tape # 365 A

R. 9-8-10 Remained same as when first put to test Tape # 365 A

Coating Blanks with Dope # 487.

Entd .M.
OCT 3 1910

Melted to 250° F. & would filter only about Half the Quantity through the 160 Mesh wire cloth and linen. the Coating of 19 Blanks was effected without trouble. The [illegible] 120°. Upon to Exposure after 1/2 hrs. Heating the Blanks in the oven Rolled and no air blast was applied. Six of the Blanks are reported imperfect owing to dirt that accidentally fell into the dope. There are no Blanks that contain air bubbles but 5 of them contained depressions which looks as if a bubble had been formed during the coating operation and that Chemical when cooling and made a depression in.

Will Number R. 10-3-10

Moulded 1 Record will be R. 10-3-10 1-A

Coating Blank with Dope # 486

Entd .M.
OCT 3 1910

Melt 4 filter through 160 mesh wire with linen sheet in contact. this Dope is much more fluid at 276° than the # 487 it passed right through the Double filter. the Coating went on nicely, but the air bubbles were more prominent than in the # 487. Coated 17 Blank Will Number B 10-3-10

Moulded one Record will number R. 10-3-10 2-A

Entd .M.
OCT 4 1910

Moulded B # 10-3-10
2
Will Nº P. 10-4-10.
1

Moulded B. 10-3-10
1

Will Nº P. 10-4-10
2

Entd .M.
OCT 4 1910

Coated 12 Blanks with B. Base # 488 melted & filtered through double filter 160 mesh wire screen & Linnen, passed through evenly at 180°F. Coating at 180, was troubled with Bubbles and prevented getting a Blank fully covering the Blank & on cool. Talking on every Blank putting at the Rebuff make Impossible Bubbles. These will be Numbered B 10-4-10
3

Moulded Record will number R 10-4-10
4

Moulded Record with Blank 10-4-10 Heated to plastic condition from 3
half hr. before pressing. will number R. 10-4-10
5

Moulded Record + Blank 10-4-10
Heated to make Hard-plastic 3
Matrix little hotter will Number R. 10-4-10
6

Ent'd OCT 5 1910 .M.

Coated 17 Blanks
with D Batch #365 A
[illegible]
[illegible] 16 good blanks
[illegible] 10-5-10
1

Ent'd OCT 11 1910 .M.

Moulded Blanks # 10-5-10
Mill Number R. 10-11-10
1

Moulded Ten of them
without any extra work, that is
the Blanks were coated and not
rolled, were allowed to set, then
simply heating them to render
plastic and moulded as usual.
All good records except one
which showed that there was
a speck of dirt on the blank
or in the making.
These were moulded by giving
500 lbs for 1 minute 1200 lbs
for another minute & 1600
for 5 minutes more, but as
soon as the 1600 lbs was
turned on, the Electric fan
air blast was turned on to
avoid cracking glass.

Rec'd .M.
OCT 1 1 1910

Rec'd .M.
OCT 1 2 1910

Up to now the Size of the winding Mandrel for the Snake tube has been 2.067" Dia. that produces a tube having .030" thick It is now proposed to make the tube .060" thick, so all the tools for the Construction of the tube will have to be changed in size which will be here recorded, the following are the Present Sizes

Winding Mandrel	2.067"
Trimming Title. Die.	2.064.
Title Ring turning die 1st	2.064
" " " " 2nd	2.047
Coating Mandrils	2.050

ENTD .M
OCT 12 1910

Mr Edison gave me instructions to form Estimate of plant for the Making of 3000 records per 10 hrs. Gave it to him on Mr Reardon was put on the job of laying out the Plant. I went to work with him outlining the requirements

Made Experiments for Mr E. in a Record Jerome by first moulding a core of cheap material then covering such core with finner material and heating such Blank to render it plastic, then moulding it by Hydraulic pressure same as the proper Records.
the result was that the Cheap material Core which is made up of Rosin (colophony) and Asbestos powder, would not contract out of the Moulding, not even when placed in Ice water for as long as 24 hrs.

Made another Ex by coating a Regular Montauk Wax blank with finner or harder material, in this case used D'Dope # 365 ; then heated the Blank to render plastic and mould under pressure as before. this Ex, allowed the Records to contract enough to loosen the matrix and such Records is possible; in fact, it is possible to put a coating of Shellac or Gum et upon either or combination of cheaper compound provided such compound has a contraction during the cooling

Enter'd .M.
OCT 13 1910

Under the Making of Bread paper I Record Mr. Mc. Good me. I found that the Peoples were not quite satisfied to allow the right amount of glue if allowed too much it go through which caused the cloth to become wet with it and make wrinkles.

Mr Edison states that a lady had been arrested in the Red Bank building with the Kinetic Office for selling a plaint to make stock ladies paper Powers for 10 cents.

Placed 9 blanks in the oven over steam table for 6 hours at a temp only sufficient to render the coating mucilaginous but not enough to run. The gums the blank a glossy appearance these blanks would not unmould S. B. 10-13-10

Enter'd .M.
OCT 14 1910

Opened 12 tubes of thicker wall than previous the thickness when opened dried 2 hrs Number of tubes 30 of the Vol. 6.16 Inches Allowed them to dry in the open for 24 hrs then placed in Oven at 200° F. for 2 hrs Then Baked at 250° F. for 2 hrs Baby [illegible] Benedict and with [illegible] tubes [illegible] and [illegible] [illegible] [illegible]

Second test winding the 6 inch Record Tube Made 3 the Machine ran by making the only [illegible]

Ent'd .M OCT 15 1910

Moulded B # 10-14-10

Cold Ma R'd 10-15-10

Moulded S.B. 10-13-10

Record St'd 10-18-10

Ent'd .M OCT 18 1910

Coated 6 Blanks Tubes # 10-14-10

Dope is slate color by means of Black # 26 aniline

Pressed The Records will Number 10-18-10

Not one of these came out perfect two of them cracked open while pressing due to machine having two large the other 4 showed air spots.

Ent'd .M.
OCT 19 1910

Coated 8 Blankets made of News paper of Grade, Christmas mill
Number the tubes 10-14-10
Rope 365 B 2
and the Coated tubes B 10-19-10
1

The Records Number R 10-19-10
2

Coated 4 mirror Tubes # 10-14-10
1
with Rope 365 B
the Coated tube will be No 10-19-10
3

Ent'd .M.
OCT 20 1910

Entd .M.
OCT 2 1 1910

Grinding Small Tubes
with News Paper
Before passing through sizing-
dies micrometer O.D 2.160
after standing in open 10 hrs 2.
18% Gum is mixed for this by.

Entd .M.
OCT 2 2 1910.

Ground 14 Small Tubes
with News Paper .15%
Gum .003" clear when
fresh ground micrometer
O.D 2.15-8 to 2.160
after passing Through the sizing
dies micrometer indicates 2.145
18% Gum was mixed
after standing 36 hrs. micrometer
2.140
After 5 hrs drying in Oven
Temp 130°F micrometer 2.138
The wire br Nr 9-10-22-10

Entd OCT 2 1910 .M.

Coated T. 10-22-10
with T's Dofic # 365 Not filtered
Will Nr. B 10-26-10

Record 10-15-10 was put to Cold Test + cracked when 14° above 0

Entd OCT 27 1910 .M.

Moulded B # 10-26-10
Will Nr. R. 10-27-10
Delivered 3-4 For Cold Test

Moulded B- 10-14-10
Will Nr. R. 10-27-10
2

Ent'd .M.
OCT 27 1910

Around News Paper tube
18 Yr turns 1 Half & Half Bind Hebeap
Finish wound measures 2.135. O.D.
Thickness of Wall .0145"

After 14 hrs. Air Drying in Room at
80° temp. Measures 2.138. O.D.
Thickness of Wall .070"
After 1 hr. more drying in Oven at
170° Temp. Measures 2.130"
Thickness of Wall .065"

See Next Page

Ent'd .M.
OCT 28 1910

Dipped 15 of yesterday's tubes into Shellac Solution in Denatured Alcohol into which is added some chalk to give the solution body and also to act as a prime upon the tube. and place into oven again at 170° Temp for 2 hrs.

Entd OCT 31 1910 .M.

Wound 6 tubes running fast speed about 260 R.P.M.
Polish, Gum, Ink.
17½ turns. — 17¼ turns of Wheel
Tuition on paper Roll.

Entd NOV 1 1910 .M.

Dipped yesterday's tubes into Mallacher Co. Polish, and let drip for 1 hr., then in Gum Gor 5 hrs. Wide No 11-1-10

Careful Test of Tubes

Wound More tubes with Mallacher, Cheap Gum, Tuition Roll, fast speed 260 Rev. per minute forced through Lying No. .145". after standing over night for 2 hrs — 2.134" O.D. Dipped in Gum for 3 hrs. Measures 2.125" O.D. then dipped in Solution & Dried in open air ~~Dried in open air~~ ready wanted for use

Wound More Tubes with M. C. 6.16. paper, Cheap Gum, Tuition on Roll. Fast Speed 260 Rev. per minute Forced through die 2.145" after standing over night Measures 2.125. O.D.

2.1N

When Dipped in Solution & let stand in open air until wanted for use.

[55]

Entd .M.
NOV 2 1910

Coated V- 11-1-10
1
Will No B. 11-5-10
1

Coated V. 11-4-10
2
Will No 11-5-10
2

Coated V 11-4-10
1
With #365 Dis Dope with
Bone Black added
Will No 11-5-10
3

Coated V- 11-4-10
2
With #365 Dis Dope with
Bone Black added.
Will No 11-5-10
4

Entd .M.
NOV 2 1910

Moulded B 11-5-10
2
With Reno Matrix which
is .1010" larger than
The Rebound the pressure
was 400 lbs for 1 minute 800 lbs for
another minute and 1600 lbs for
5 minutes more with jam start
to cook. Record came out
good in every way Will No 11-5-10
6

Moulded B 11-5-10 with
Reno Matrix. Pressure used
as above. The heating was
obtain by placing the Cold
blank into the matrix and
heating the Matrix.
Record came out good in
every way Will No 11-5-10
7

Over

Moulded B 11-4-10

Pressure 350 lbs for 1 minute
600 " 1 "
900 " 1 "
1200 " 1 "
1600 " 1 "
with 1 flash 800 " 4 "
Record Extraction good
(Will) 11-5-10
8

Moulded 11-5-10
5

measures at Title end 2.170
other End 2.117
Mating at Title End 2.18
other End 2.192
Washed by placing the Mould
Cold in Mating and Sealing
Letter, Same pressure as
above. Record Cracked when
at Gage But for about 1 inch

Moulded B. 11-5-10
5

Record No. 11-3-10
Other Letter Leaking.

Moulded B 11-5-10
5

Record 11-5-10
5

Was made Platten thousand. Moulds Letter
Smoother

Opened 17 Tubes of V.E. 616 paper
low price Gum Solution
Metal pressure pad, This seems
to be an improvement, as it
lays the paper flatter and does
blister to air blisters in the tube
Will Try 11-3-10

Ent'd NOV 5 1910 .M.

Records as they are now made up to date do not stand the Cold Temperature test; all that have been put to 0°F. have cracked. Consequently useless—

Ent'd NOV 7 1910 .M.

Made Six Records with tubes formed as usual then corrugated inside & outside with Kimmling-tool the tubes were not dipped into shellac solution to make water-proof; the Records all cracked under Cold test; it seems that it is the paper tube that absorbs moisture and swell to crack the coating.

Made Dip: Blanks with Mixture as follows

Shellac 7 Parts to 7 ozs
Fat Canelide 1/8 " 1/8 oz
Denatured Alc. 1/2 Pint oz

Will Str. 11-8-10

The tubes were the Regular thick wall - and of V.E 616 Paper

Made Composite tubes by substituting the Gum Arabic for the Regular Record Coating Compound the tube winding machine is provided with heating device to keep the Dope liquid and that is about all that was necessary to form the new tubes. There is but very little contraction of the tubes after it is formed only .0

The tube is instantly ready for coating with record Dope to form the blank

The Compo - for tube building is as follows Chloro - Naph. 1/4 oz
Shellac 2. 1/4 oz
Shellac 1 1/2 oz

The paper used is V.E 616

These will be no 11-10-10

Coated 4 tubes #4-11-1910

Winding Tubes with new Machine which is just Complete.

The paper used is from DEC 1 1910 the Ribbon + Liker Paper Co. of Paterson N.J. which is said to be 2 points Thick. But measures .0015" I will Call this paper R+J #1

The Dope used is mixture as follows Chlor-Nap- 6 oz
Stera G. ½ oz
Rosin 2 oz
Shel- 16 oz

Did not mould Records from any of these above blanks for account of the Little Ends not being perfect.

RECEIVED
DEC 6 1910
M.

Wound 8 tubes with new Machine & Dope Mixture as follows

Chloro-Naph—	6 oz
Ster J.	1/2
Rosin	7 oz
Shellac	16 oz

the Coating amount on all right Tubes will be numbered

12-6-10
1

RECEIVED
DEC 7 1910
M.

Wound 28 tubes in new machine with Dope Mixture as follows

Chloro-Naph	7 oz
Sti J.	1/2 oz
Shel	16 oz

The Coating of the paper is layed very good, as good as practical and the Machine is well adapted to make a good blank V. the one trouble experienced is that the dope does condense too soon - about 2 hrs. after the dope is first melted into the container condensation of the dope on the sides - edges - and bottom - has taken place and some portions of that condensed dope does mix with the fresh which is added from time to time - and those portions of condensed dope will not melt into the fresh dope These Blanks will be numbered

12-7-10

Ent'd .M.
DEC 7 1910

Coated records + Blanks
#12-7-10
And 12-7-10 with
Moulded Records 12-7-10

Ent'd .M.
DEC 8 1910

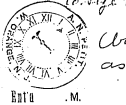
Moulded 9 Blanks
12-7-10 all of these
were imperfect in
the way of Blisters
and depressions, moulded
Records with them especially
to test if the blisters would
swell out again after
the pressure in the Material
Coil Number three R 12-8-10

Winding Tubes with V. E 1161 paper on new machine

Dope used is # 365 with 1/4 pint of Spirit of Wine to render more liquid particularly for purpose of filtering

There will be No 12-14-10

These blanks have been provided into making to weigh thereafter coating



Wound Tubes with Dope as follows Chloroform 12 oz
Stem 4 1 oz
Shellac 30 oz
Heated to 270°F & filtered through 60 mesh wire cloth & worked well all through & these will be
No 12-15-10
1

These Tubes were all measured across the middles and the figures will be marked inside of the tube. This is to determine the thickness of Record Dope Coating

On account of the irregularity of the Dimensions Surface of the tubes the Coating could not be made to uniform. Turned off all the tubes in a lathe to measure 2.160" then Coated them over again which coating went on perfectly Even these will be No B 12-15-10
2

Coated 5 Tubes which measured less in Dia than 2.160" for the purpose of testing the weather the thickness of Record Coating is the Cause of cracking when subjected to Cold & Heat these will be
No 12-15-10
3

Coated 2 Tubes of the Blue Mode the Dia. of which are 2-105" when Coated they measure 2.178 that makes the Coating .086" in Thickness these will be No 12-15-10
4

Ent'd M.
DEC 17 1910

R. 12-17-10 — the Blank was heated in oven 150° F. for 3 hrs. then moulded. the Color is darker than others heated less.

Ent'd M.
DEC 22 1910

Annulus Tubes with more Dope between layers of paper

Dope Chloro-Nap — 12%
F. Stearate — 12
Shel — 38

There are 26 tubes in this lot Varying in number of turns and Dia. all are marked inside. the Dope worked first class running liquid for 3 hours.

Will Number 12-22-10
1

Ent'd M.
DEC 23 1910

Coating I. 12-22-10
1

Dope Chloro-Nap 5½
F. Stear 1½
Shel — 15

Will Number B 12-23-10
1

Ent'd M.
DEC 24 1910

Moulded B 12-23-10
1

Will Number R. 12-24-10
1

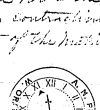
These mould best when Blank is .014" in Dia. smaller than the Mathes. the Blank must be made plastic in oven heated not over 160° F. for about 9 minutes and the Mathes about same temp. the pressing is 400 for 1 minute 800-900 for another minute and 1800 for 6 minute more with cold air directed on to the Mathes to cool.

Oxide Number R. 12-24-10
1

Ent'd .M.
DEC 27 1910

Moulded more Records same as produced Oct 12th. this time the Experiment was more successful particularly on account of having put through a greater number of them which followed upon different method of procedure such as rendering the Blanks more or less fo Coction & pressing more or less & the time intervals between and the time for last of the pressure. The Blanks — or rather the Core was the same as on Oct 12th and the Record Coating Compound was the same. The Device for heating the blank and for pressing the Record. are del the same as those used Oct 12th.

To day I found that the core of Montana Wax to should be near to 2.075 in Dia and the Coated blank 2.160 this allowance to use most of the Matrices. The Blank should be heated in oven 150° F until it is plastic but not sticky — The Matrices should be heated to about 150° F. The pressure should be from 0 gradually up to 1800 within a minute then turn on the cold air to chill. the pressure should be turned off before the Matrix has cooled lower than 100° the further cooling allows contraction enough to drop out of the Matrices.



Coated more Montana Wax Blanks with —

Ent'd .M.
DEC 29 1910

Chloro-Naph 5 1/2 parts
3- Stearine 1/2 "
Shel 1/5 "

finds that some precautions has to be exercised to make this successful. If the Dope is applied without cold blast of air it will peel off right there during the cooling. the Cold-air chills the shellac Dope so quickly that it is impossible of separating to peel off.

Rec'd DEC 30 1910 Ent'd .M.

Moulded some of the blanks made yesterday, there would work enough with the proper care, first the blank must be heated slowly say at atmos. of 150°F. in about 15 minutes the blank is plastic enough to be pressed, without liability of cracking, the matrix must not be heated so much that the Dope will stick to it. the pressures are from 0 to 1800. gradually going up. after minute the color air may be thrown on in about 5 minutes more the Record is cool enough to be practical. Some air spots have shown up which was the only defect with todays Ex. that is due to some air spots or depressions on the blank previous to Record pressing.

Rec'd DEC 31 1910 Ent'd .M.

Pressed more Records of Blanks same as yesterday the comments are the same of yesterday

Started to work upon a perforated sheet of paper with Gold Blanks, this Exhibit to represent the perforation of the paper & sketched out a punch & die for perforating and plot it ready making—

Made some and put on the Montana-Wax Blanks & on the Coating machine. & coated some more with same Dope. this Dope is particularly to overcome the improper shape & dimentions

Made more Blanks coated with Dope containing some asbestos Pulverized and made through 60 mesh. this Dope is so thick that

(78)

Moulded Records from Blanks made yesterday.

Started to perforate some V-E 616 Paper for the making of Blanks that are intended for pronut cracking when subjected to Cold Test.

Coated some more Montana-Wax blanks with asbestos - Extra Color - Wax & Shellac Dope. This Mixture works fairly well. But to be practical should be rendered more liquid. the Records all press out good with no more difficulty than #365 Dope.

Wound some Blanks by the method of passing twin through Record Oil and winding upon metal mandrel. Then coating the periphery in the usual manner then pressing the Records in the usual manner.

Result Records show Ridges equal to the turns of the twin.

Wound more Blanks with twin, tried paper twine and soft cotton twine. On account of no special device to do the winding the Result was not good

Rec'd JAN 19 1911 M.

Dope #365

Wound more Blanks with twin by the method of winding the twin upon a Rough paper tube as formerly, this method shows much more possibility than without the tube.

Made a lot with one Row of paper twin and as fibre this how the paper cloth was passed through the dope besides having the control of the two walls too much twist, some special device. This lot will be Numbered

1-19-11

1

There is on hand 4 different size of paper twin which I will give Numbers according to their diameter the smallest will be #1 next larger #2 next #3 the largest #4

Rec'd JAN 19 1911 M.

Wound another lot with #2 paper twin upon upon tube passing the twin through the hot Dope as was before these will be No

1-19-11

2

Wound Another with No 3 paper twin passing through the Dope as was before but the apparatus is now provided with a screw head to control the pitch of each turn of the twine this makes a much more uniform tube.

there will be No

1-19-11

3

Rec'd .M.
JAN 20 1911

Blanks Nos 1-19-11 / 1 2 4 3
Were Coated, (Rough coated)
with a Mixture of
Chloro-Hypo 6 parts
G. Starch 1 "
Shell 16 "
Ground Wood Pulp 1 part
The mass is pretty thick to
work but can be applied.

Two of the Blanks were
coated Quill size according
to Receipt of Modifying for
the purpose of testing the
Cut back qualities
These will be 1-19-11 / 3 A 4
1-19-11 / 2 A

Rec'd .M.
JAN 24 1911

Moulded 4 Records
with Blanks # 12-23-10 / 1
4 12-15-10 / 2

The Blanks were heated in
an oven 150° F. for 3 hrs. this
has the effect of so drying the
paper that so much that
unless the Matrices are carefully
selected to suit the blank
they will burst or split open
when the pressure is applied.

These Records will be Nos 1-25-11 / 1

Ent'd JAN 24 1911 .M.

Coated Paper Tubes
11-3-10
The tubes treated for 8 hrs. at 150° F. and Coated with # 365 Dope will Nz Blanks 1-24-11

Ent'd JAN 25 1911 .M.

Made Blanks by coating with # 365 Dope on the surface of one thickness of # V.F. 616 Paper wound upon a mandrel. The total thickness of the Blank Wall is .025" the method is prattly feasible. / there will be Nz 1-25-11

Pressed Blanks # 1-25-11 they press good and dry fast all night there will be Nz 1-26-11

Ent'd JAN 26 1911 .M.

Entd .M. JAN 26 1911

Tried to water-proof some News-Paper Blanks by dipping them in Shellac. Cast one tube was heated in Oven 150° F. for about 1/2 hrs then into Black Ozokerite at 230° F. for about 20 minutes and rubbed in warm Bungee.

The Object is to ascertain what Record can be put on this Cotton Wood tube which is impervious to stand the Cold Test.

The Record above described was Tested for Cold 4° below O. and cracked.

Entd .M. JAN 27 1911

Made Records by first boiling Bamboo Spiral covered Tube, then Black Ozokerite 350° F. and washing off excess into warm Benzine then coating with #365 Dope and pressing into Matrix. Result the inner tube buckled up.

Made Record by first boiling a wood tube into B. Ozokerite and drying for 2 1/4 Hrs. Then Coating it with #365 Dope and pressing the Record, the wood cracked with the pressure and would not contract out of the Mould at ordinary temp. Cooled upon ice which caused it to shrink and immediately the wood did split open.

Ent'd .M.
FEB 1 1911

Made Experiment by dipping Spiral-wound inner tubes into a Compound of Tetra-Chloride of Carbon & Gasolene in proportions to render the original covering to the Drip Tube absorbent after drying a few hours. The absorbent of the Drip Tube upon the Blank [illegible] the Rubber and the Rubber [illegible] to the Metal Tube through to swell the Strip upon the Blank and so fill the Heating Chamber. The Result is good for short Tubes. The objection is the [illegible] Contraction of the Rubber [illegible]

[90]

Ent'd .M.
FEB 2 1911

Made Compound for Inner-tube Drip. to render same waterproof and at the same time to cause a contraction of same when subjected to Heat this Compound having great contraction which is expected to draw the Rubber Tube with it when the Spikey Wire has absorbed the Comp. the formula is as follows

Paraffin	3/4 lb
Crude Maltene Wax	3/4 lb
Elaterite	2 oz.

heat to 330° F.
it requires about 4 hrs to dissolve the Elaterite when it ready for use.
Dripped 9 inner tubes the first 2 were into Solution for Each 1/2 hr. and they absorbed 7/8 of one ounce of solution — The Dry tube itself weighs 7/8 of 1 g.

Started to work upon a Record which will have a plastic material Comthat is a cylinder made of a material rendered plastic by heat and pressed into mould in like in that condition and sets upon cooling

The Plastic Compound must be very cheap. Therefore will make some experiments with Rosin as the principal Base.

Rosin with ~~Castor~~ Corn oil makes a fine mass which is clear and does not Bubble. it renders the Rosin less brittle

Copal - 7% cents. Rind dissolves in Acetanilide and in alpha-Naphthol in Acetanilide produces a hard brittle mass.

in Naphthol produces a plastic mass

Made a example of Plastic which is Composed of Rosin Coal-ash Cotton flock and Corn oil

Made another mass of Rosin Comp. Black of Cotton flock

Made another mass same as first above less the Corn oil

Made Composition consisting of Rosin 3½ oz
Coal ashes 1¾ "
Cotton flock ½ oz
Corn oil ½ oz

Rec'd M.
FEB 14 1911

Completed Drawings for Moulding Device to form foundation tube for cylindrical Record

Rosin 3 oz
Corn oil ½ oz (liquid measure)
Coal ashes ½ oz
Cotton flocks ½

Rosin 2 oz
Corn oil ¼ oz (weight measure)
Coal ash 7/16 oz
Cotton flock 7/16 oz

#2-14-10
2

pretty good
Dry and substantial enough

Rec'd M.
FEB 15 1911

Elaterite with Stearic Acid and Rosin with Ultima application mixed the two separately

Rosin & Silicic Acid
[illegible] hard brittle [illegible] tougher than Rosin and not so [illegible]

Rec'd M.
FEB 17 1911

#2-17-10

Rosin - 1 B.S. & Shellac
little Picric Acid. Melt altogether and pour upon Rolls and add Cotton Flock & China Clay Equal parts.
— Good — try again —

Gum Accroids Mixes with B.S. to form a hard Brittle Mass.

Rosin with Limedoxide mixes well together to form a more clean mass that is less sticky but almost as brittle as Rosin (Calculated proportions)

B. S. with Lead Resinates forms a ^hard mass that is sticky when 100° F. but brittle at lower temps.

Tetra-Chlor. Naph. with B. S. and Tetra-Chlor-Naph-Residue forms a very hard brittle mass.

Soapstone with Rosin forms a hard mass tougher than Rosin and not sticky at normal temps.

B. S. with Manganese Carbonate forms a Dry-Hard mass only fairly tough try again

Soap Stone makes a very good filler for B. S. takes up a considerable amt and no Bubbling whatever But does not harden it unless it is saturated with it

Abietic Acid combines with B. S. to for a beautiful Glossy Mass. Hard but brittle

Calcium Carbonate mixes well with B. S. but remains Soft + Sticky

Barium Carbonate mixes well with B. S. but Remains Soft and Sticky

Magnesia Sulfurica with B. S. boils up when one is added to the other. Not

Entd .M.
FEB 22 1911

B. S. heating to boiling add Copper Carbonate little by little to the point when the mixture when cool is brittle.

In another dish melt B. S. to boiling add litharge little by little until when cool it forms a dense hard or plastic mass. then turn this mixture through a filter into the Copper Carbo mixture and add just enough to obtain the consistency required. This forms a beautiful black glossy mass somewhat brittle and softens at blood heat temp.

The addition of Cirasene to the above reduces the brittleness. But will take only a limited quantity

Entd .M.
FEB 23 1911

Put on Steam Table the following mixtures —
Linseed-ol-with Carbonate of Copper —
Linseed ol. with Manganese Oxide
" " " " Carbonate
" " " " Borate
" " " " Litharge
Rosin with Carbolic acid —
B. S. " " "
Albumen " " "

Entd .M.
FEB 24 1911

Made a plastic mass of Starch and Zinc Chloride to a thick consistency (was very tenacious)
Added Barium Cl. Carbonate to harden

Entd M.
FEB 2 1911

Heated Rosin 4 oz
Linseed oil 1" for
at 250°F. 2 days — Poured upon
Rolls · & added mixture
of Half Soap-stone & Cotton
flock & stirred in a plastic mass
This Sample will be No. 2-24-10
Mass Too Soft

Entd M.
FEB 25 1911

Manganese Oxide 1 oz
Silicate of Magnesium 1/2 oz
Flock " 1/2 oz
Corn Oil " 1/2 oz
Mix the flock & Corn oil over
Heat until well incorporated then
mix the two above thoroughly
this will be Called Filler #1
Too

Entd M.
FEB 25 1911

Coal ashes 1/2
Silicate Magnesium 1/2
Flock 1/2
Corn oil 2
Mix & warm as before
Filler # 2 Too much oil
N. G.

Entd M.
FEB 27 1911

Result of Digesting Rosin
with Linseed oil for one
week over Heat at 150°F.
It raises the Melting Point
some, but does not reduce the
brittleness enough to pay for the
Heat consumed

Digesting Linseed oil with
Carbonate of Copper or with
Manganese Oxide or "
" Carbonate produces
a gelatinous mass that will
not dissolve again in Mineral
at the same temp or even a
much higher. It can be Heated
enough However to melt it but

ENTD .M.
FEB 27 1911

then the resulting mass is a very brittle mass not nearly so much improved then Plain Rosin.

Digesting B. S. over Heat at 150°F with Manganese Oxide produces a semi-hard mass similar to coal tar, but softer at less then 100°F. and becomes sticky

Rosin with Ch. Iodic Acid produces a dry brittle mass more brittle then Plain Rosin.

Filler #3

Coal ash	1 oz
Soap Stone	½ "
Cotton flock	½ "

ENTD .M.
FEB 27 1911

Plastic Mass. #2/27/10

filler #2 with Shellac produces a very tenacious mass. Could stand little less oil. Try again (Sample putty good)

This same filler with Rosin will produces a mass that does not Harden. remains soft & sticky M.G.

Filler # 3 16 parts
Rosin 15 "
add little Bangole when on the Rolls to make more plastic
This will Sr. 2/27/10
2

Test — the mass is more brittle then #1 Best Hardens and dryer

Filler #3 with Mixture of Rosin 1 oz & Linseed ¼ weight on Heat 150°F. for 4 days and nights ——— ½ parts
Filler #3 ——— ½ "
This will Sr 2/27/10
3

Filler #4
Manganese Oxide 1 oz
Cotton Flock 1 "

Ent'd M.
FEB 27 1911

Filler #4 ——— 3/8 oz
Mixture Rosin 1 - Linseed oil 1/4 — 3/8 oz
this will Str 2/27/10
4
Good

Filler #4 ——— 3/8
Rosin 1/4
Red oil 1/8
this will Str 2/27/10
5
Similar to above, not quite
so dry

Filler #5
Manganese Oxi 1 oz
Soap Stone 1/2 "
Lamp Black 1/16 "
Cotton flock 5/8 "

Ent'd M.
FEB 28 1911

Filler #5 1/2 oz
#1. Linseed Rosin 3/8 " Fair
Will Str 2/28/10 little soft
1

Filler #5 1/2 oz Good
Rosin 1/2 " try Cyl.
7/16 Copal 1/8
Will Str 2/28/10 do for the Rest
2

Filler #5 1/2 oz
Shellac 1/2 "
Rosin 1/8
Will Str 2/28/10
3

Entd .M. FEB 28

Filler # 6
Rotten Stone 1 oz
Lamp Black 1/16 "
Black 1/2 "
Turpentine with Kauri Gum

Filler # 6 1/2 oz
Rosin 3/8
7½ # Copal 1/8
Mill No 2/25/10 Not tough enough try with Filler #5
4

Filler #5 — 1/2 oz
Rosin 3/8 "
7½ # Copal 1/8 "
Mill No 3/1/10
1

Entd .M. MAR 1 1911

[106]

Entd .M. MAR 1 1911

Filler #5 1/2
Rosin 1/2
7½ Copal 1/8
Mill No 3/1/10
2

Filler # 5 — 1/2
Rosin 1/2
Shellac 1/8
Mill No 3/1/10
3

Filler #7

Rotten Stone	1/2 oz
Mang Ox	1/2 "
Soap Stone	1/4 "
Cotton flock	3/4 "

filler #7 — 1/2 oz
Rosin — 1/2 "
7½ Copal — 1/8 "
Mill No 3/1/10
4

filler #8 — 1/2 oz
Rosin — 1/2
7½ Copal — 1/8
Mill No — 3/1/10
5
Under the Rolls this works stiffer than # 4

Filler #8

Manganese Ox.	1/2 oz
Coal Ash	3/8 "
Soap Stone	1/4 "
Cotton flock	3/4 "

Filler #7

Entd MAR 2 1911

Plastic Mixes to Make
Sample tubes
Sank as #2 3/1/10

Filler #5 —— 1/2 oz
Rosin 3/4 " 1/2
7½# Copal 1/4 " 1/2
#5 3/2/10

Filler #9

Rotten Stone 1/2 oz
Soap Stone 1/2 "
Cotton Flock 3/4 "

Entd MAR 3 1911

Compound
Gas Pitch 1/4
Shel 3/4
in Small Cacerolles on Steam Table

In another Gas Pitch 1/4
Rosin 3/4

Shellac Gas P. Mixture after 1 hr on steam table
seems to mix well but does not
prevent Shellac from Condensing.
This mixture with Filler #5
Chill No 3/3/10

Filler #9 1/2 oz
Rosin 3/4 "
7½# Copal 1/8 " Good
Gilsonite 1/16 "
Chill No 3/3/10

Entd M.
MAR 3 1911

Filler #10
Rotten Stone 1/2
Soap " 1/2
C. Black 1

Filler #10 1/2 oz
Rosin 3/4 "
7/2 Copal 1/8 "
Will Nº 3/3/10
3
Good

Filler #10 — 1/2 oz
Rosin 1 "
Copal 1/8 "
Will Nº 3/3/10
4
Soft Test-Cracks

Entd M.
MAR 3 1911

Moulded tubes with
Plaster # 3/4/10
1
Will Nº 3/3/10
1

Entd M.
MAR 4 1911

Filler # 10 — 5/8 oz
Rosin 1/8 "
7/2 Copal 1/8 "
Will Nº 3/4/10
1
Scrap - 1/4 added to above will Nº 3/4/10
Thoughs then without scrap — 1X

Filler #10 — 5/8 "
Rosin 1/8 "
7/2 Copal 1/8 "
Tetra Ch. Nap 1/8 "
Will Nº 3/4/10
2
Not so tough as without Tetra-chlo-Nap
Heated material more brown one drop
which produced gloss. # 3/4/10
Test more brittle than #2 2X

Filler # 10 — 7/8"
Rosin 7/8"

Ent'd MAR 4 1911 .M.

Binder # 1
Rosin 5 oz
6½ Hopeful 1 oz
Melt Resin and Cool Off
Emulsify, Dilute Emulsify to 4½ Gal. and
Filter all thru 4 layers of Cheese

Made Plaster as follows:
Rosin 1 oz
6½ Cap. 1/8"
Bring to a boil and allow all grease
to escape. Pour this into
the Rolls and add 1/2 oz of #5 Gl.
Will Sz. 3/6/10
1

Ent'd MAR 6 1911 .M.

#12 Filler

Lamp Black 1/32
Rotten Stone 1/32"
Soap Stone 1/4"
Flock 3/4

Filler #9 — 1/2 oz
Binder #1 3/4"
Will Sz. 3/7/10
1 Good — little brittle.

Ent'd MAR 7 1911 .M.

Filler # 9 — 1/2 oz
Binder # 1 1"
Will Sz. 3/7/10 Not tenacious
2 enough

Filler # 13 1/4
Binder # 1 1/2 Good
Will Sz. 3/7/10 little brittle
2

Filler # 13

Magnesium Oxide 3/8
C. Flock 1/4 "

Filler # 13 — 1/4
Powder # 1 — Mealy
will No 3/7/10
4

3/4
Mealy
3/7/10
5

Filler # 14

Rattan Sto. 5/8
Soap 3/8 1/8
L. B.

Clear Rosin 4 1/8 "
Ground 6 1/2 Copal 1/16 "
melt on Rules and add
C. Flock 1/8
mix thoroughly + add
filler # 14 1/8 Ground Litharge
will No 3/7/10
Just as good as melting the Rosin + Copal separate

Clear Rosin 4/8
Ground 6 1/2 Cop 1/8 Good
melt on Rules + add Better than # 6
C. Flock 1/8
filler # 14 3/16
will. No 3/7/10
14

Same except use
filler # 14 1/4 instead of 3/16
and mix the Copal with filler instead
of with Rosin
will No 3/7/10 better than
8 # 7

ENTO M.
MAR 7 1911

Clear Room 4/8
Thick Oil Rolls
Lined with Black 5/16
Mix throughly & add
Mixture 5—
Linseed Oil
& Filler #14
will use 1/8 Good
5/16 better than
#6

Filler # 15

Rattan Stone	5/4
Corpal "	4/4
Soap Stone	3/4
Silicate	2/4
L. B.	1/4

ENTO M.
MAR 8 1911

Room — 8/16
Flock 3/16
Filler # 15 5/16

Mr. G. Hard and pretty
Tough but little sticky and
adheres to the Machine
Silicate is not good

Filler # 16

Rattan Stone	5/4
Corpal "	4/4
Soap Stone	3/4
Mica R.	2/4
L. B.	1/4

Room 8/16
Flock 3/16
Filler # 16 5/16 Pretty Good try again
will use 3/5/10

#17 Filler

Rotten Stone 5/4
Cupal 1/4
Soap Stone 3/4
L. B. Linseed 3/4
Magnesia Ox. 1/4

Entd MAR 8 1911 .M.

Rosin 8/16
Flock 3/16
Filler #17 5/16
Will Nº 3 3/8/10
2

Rosin 8/16
Flock 4/16
Filler #17 5/16
Will Nº 3 3/8/10
3

Rosin 8/16
Flock 5/16
Filler #17 5/16
Will Nº 2 3/8/10
4

Melt Rosin & Parts with 6½ Cupal and 1" for about 10hrs. or until all gases have escaped Will Call this Binder # 2

Entd MAR 9 1911 .M.

Rosin 5/16
Binder # 2 10/16 Put through
Flock 5/16 to work
Filler # 17 5/16

Rosin 10/16 Seems to have
Flock 5/16 considerable Cutting action
Filler #17 5/16
Will Nº 2 3/9/10
1

Rosin 10/16
Flock 4/16
Filler #17 6/16
Nº 2 3/9/10
2

Rosin 10/16
Flock 5/16
Filler #17 5/16
Nº 3 3/9/10
1 3

Ent'd MAR 9 1911 M

Rosin 8/16
Livers 4/16
Filler #/4 4/16.
Copal 3/16
No 3/9/10
4

#18 Filler

Rotten Stone 10/8 — 50
Copal 6/8 — 40
Soap Stone 6/5 — 30
L. B. 2/8 — 10

Rosin 4/8 has
Flock 1/8 Contraction
Filler #18 4/8
No 3/9/10
5

Ent'd MAR 9 1911 M.

Rosin 4/8
Wood Pulp 4/8
Filler #18 3/8
3/9/10
6

Rosin 5/8
Wood Pulp 4/8
Filler 3/8
3/9/10
7

Rosin 7/8
Wood Pulp 3/8
Filler 3/8
3/9/10
8

Entd
MAR 10 1911

Rosin 4/8
W. Sulp 3/8 has
filler # 1/8 3/8 Contraction
3/10/10 Just enough
1 Cementation —
Matters should be Notes.

Rosin 4/8
W. P. 3/8
filler # 1/8 4/8
3/10/10
2

Rosin 8/16
L. B. 3/16
Wood 3/16
3/10/10
3

Rosin 8/16
Cop — 3/16
L. B. 3/16
Wood 4/16
3/10/10
4

Entd
MAR 10 1911

Rosin 7/16
Copal 3/16
L. B 3/16
Wood 3/16

Rosin 8/16
Shel 3/16
L. B. 3/16
W. P. 2/16

Rosin 8/16
W. P 3/16
Shel 4/16
L. B 3/16
3/10/10 — 5 —

Rosin 8/16
W. P. 3/16
Locust Gum 4/16
L. B. 3/16
3/10/10
6

Rosin 8/16
L. B 3/16
C. Flock 2/16 3/10/10 — 7

Entd .M.
MAR 1 1 1911

#19 Filler

China Clay 5/8
Copal 3/8
R. Bi 2/8

#3/11 Binder

Nitro-Chlor-Naph. 4/16
6½# Copal 7/16
Rosin 14/16

#3/11/2 Binder

Nitro-Chlor-Naph. 4/16
6½# Copal 4/16

#3/11/3 Binder

Nitro-Chlor-Naph. 6/16
Rosin 6/16
6½# Copal 8/16

Entd
MAR 1 3 1911

Binder #3/11/1 4/8
Flock 1/8
Filler #19 2/8

#3/13/1

Binder #3/11/1 6/16 Good
Flock 2/16
Filler #19 3/16

#3/13/2

Binder #3/11/1 6/16
Flock 5/32
Filler #19 7/32

#3/13/3

#3/11/2 Binder 6/16 Little soft
Flock 2/16 Lumpy
Filler #19 9/16 Contraction
#3/13/4 Stands Nap test

Binder # 3/11 — 6/16
Flock 3 — 2/16
Filler #19 — 3/16

Sticks to mould a little Has no Contraction

3/13
1

Binder 3/11 — 6/16
Flock 3 — 2/16
Filler #19 — 4/16

3/13
6

Sticks to mould a little has no Contraction

Binder 3/11 — 5/16
Flock 3 — 2/16
Filler #19 — 4/16

3/13
7 Cracked 1st test

3/4/10

Binder # 1 — 6/16
Flock — 2/16
Filler #19 — 3/16

3/13
8

Dont stick to Mould
Cracked first test

3/13/10 Binder
1

Remark: little to much monochlor

Mono-chlor-Nap. — 1
6 1/2 c Copal — 2
Rosin — 4

Heat Mono-chlor & comm it with the Pulverized Copal and Raise temp. to 440° F then add Rosin gradually and allow temp. to drop to 400°. Keep Covered as much as possible in comparison the gases which assist in melting the Copal.

#20 3/13/10 Filler
1

China Clay 6/8
L. B. 2/8

Binder 3/13 — 5/16
Flock 3/16
Filler 3/13 3/16
1
3/14/10 Little plastic
1 Set-Cracked

Binder 3/13 8/16
1
Flock 9/32
Filler # 3/13 9/16
1
3/14 Set-Cracked
4

Binder 3/13 8/16
1
Flock 7/16
Filler # 3/13 3/16
1
3/14
5
3 Set-Cracked

Binder 3/13 6/16
1
Flock 7/16
Filler # 3/13 3/16
1
3/14
3 Set-Cracked

Binder 3/13/10 5/16
1
Flock 7/16
Filler # 3/13 5/16
1
3/14
3 Set-Cracked

Binder 3/13 6/16
1
Shil 7/16
Flock " 5/32
Filler # 3/13 7/32
1
3/14
6 Set-Cracked

Ent'd
MAR 1 4 1911

Binder 3/13 1 6/16
Glycerine 2/16
S. B. X 3/32
3/14 7

Binder 3/13 1 6/16
Glycerine 2/16
Chloroform X 4/16
3/14 This Sample is more tenacious than the above.
Binder 3/13 1 6/16
Glycerine 2/16
Linseed 9/32
3/14 8

Ent'd
MAR 1 4 1911

Mono-chlor-Nap. 1 Parts
Copal 3 "
Rosin 5 "
Binder # 3/14 1
Heat to 450° & Pour off in cold water.

Tetra-chlor-Nap. 1 Parts
Copal 2 "
Rosin 4 "
Binder # 3/14 2
Heat to 450° & Pour off in cold water

Binder 3/14 / 1 — 6/16
Flock — 7/16
Lime — 6/16
3/14 / 1

Limit of flock & Lime

Binder 3/14 / 1 — 7/16
Flock — 3/16
Lime — 8/16
3/15 / 2

Binder 3/14 / 1 — 7/16
Flock — 7/16
Lime — 5/16
C. Ash — 3/16
3/14 / 3

Binder 3/14 / 2 — 6/16
Flock — 8/16
Lime — 7/16
3/14 / 4 try again, with better grinder

Binder 3/14 / 2 — 7/16
Flock — 3/16
Lime — 8/16
3/14 / 5
Rolled longtime.

Binder 3/14 / 2 — 7/16
Flock — 3/16
Lime — 7/16
C. Ash — 3/16
3/14 / 6

Rosin 6/16
Pul. Copal 3/16
Phenol 2/16
Lime 1 8/16
Flock 1/16

MAR 15 1911

Pretty hard mass but # 3/14
no tenacity.
Powders good. Try again. Put first Cracked

Rosin 1/16
Oxide Silicon 4/16
3/14
8

Rosin 32/16
Zinc Oxide 1/16
3/14
8

3/14 with flock
3/14
9

Rosin 1 Part
I. Earth 1 1/16 "
3/16
1

MAR 16 1911

Binder # 3/14 1 1/2 Part
2
I. Earth 5/16 "
3/16
2

5 parts of Earth to
5 of 1 parts of Binder is limit

Binder " 3/14 8/16 parts
2
Flock 1/16
I. Earth 3/16
3/16
3

MAR 17 1911

Comp. # 365 A. 10
Flock — 2
I. Earth 6

3/17 Good
1 Hard + Tough

Comp. # 365 A 8
Flock 1
I. Earth 4

3/17 2nd Test
2 Cracked at 8 Jet

Comp. # 365 A 8
Flock 2
I. Earth 3

3/17 2nd Test Good
3 Hard Tough

Comp. # 365 A 20
I. Earth 13

3/17 1st Test. Cracked

13 parts of Earth to 20 of Comp. is Limit

Comp # 365 A 10
Flock 3

3/17 3rd Test Good
√

Three parts of flock to 10 of Comp. is limit

Comp. # 365 A 10 Good
Flock 1½
Earth 7 After 3 days

3/17 Cracked with Drop
6 of 12 Jet.

This works stiff but moulds good.

Comp # 365 A 10
Binder # 3/4 5
Flock 2
I Earth 10 Fair

3/17 2 & 4 Test Cracked
7

This works stiff. Moulds over two Jet

Comp # 365 A 10
Binder # 3/4 5
Flock 2
I Earth 10

3/17 2 & 4 Test. Cracked

Works more plastic & then # 7 due to more Chlor.

Ent'd .M

MAR 17 1911

Comp. #365A 10
Flock 1½
Zinc Oxide 12
3/17 Good
9 2nd Test Cracked

Rubber too much Z.

Comp. #365A 10
Flock 1½
Z. Ox. 10
Stands Scratch Test # 3/17 3rd Test
10 Cracked

Rubber too much Z. works stiff at finish

Ent'd .M

MAR 18 1911

Comp. #365A 10
Flock 1½
Z. Oxi 9
3/18 3rd Test Cracked
1

Stands Scratch Test

Comp. #365A 10
Flock 1½
Z. Oxi 8
3/18 2nd Test
2 Cracked

Stands Scratch Test

Ent'd .M

MAR 18 1911

Comp #365A 10
Flock Best proportions 1½
Z. Ox 7
3/18 Good
3 Stands Test. Best

S.J. Good believe it is due to extra processing

Cracked on the 2nd

Comp. 365A 10
Flock 1½
Zox 6
3/18 3rd Test —
4 Cracked
from 12 just high

Comp. 365 A 10
Flock 1/2
Zoo 5

3/20
1

Comp. 365 A 10
Flock 1/2
Zoo 4

3/20
2

2nd day blood

Comp. 365 A 10
Flock 1/2
Zoo 3

3/20
3

Mumbs blood

Comp. 365 A 10
Flock 1/2
Zoo 2

3/20
4

Comp 365 A 10
Flock 2
Zoo 1

3/20 N.G.
5

Comp. 365 A 10
Flock 2
Earth 3
Zoo 2

3/20 Blood
6

Mumbs blood 2nd day blood

Comp. 365 A 10
Flock 2
Lime 3
Zoo 2

3/20
7

Comp. 365 A 10
Rubr. Asbestos 10
Earth 2

3/20
8

2nd Lot - Cracked

Ent'd MAR 20 1911

Comp: # 365A 10
Asbestos 10
Earth 4

8/20
9

Good

2nd Set Cracked

Moulds Good — Hard. Can be Ground Longer under Rubber.

Ent'd MAR 21 1911

Comp # 365A 10
Asbestos 10
Zinc 3

3/21
1

Comp. # 365A. 10
Asbestos 12
Zinc 2

3/21
2

Moulds Soft

Comp. # 365A 10
Asbestos 14
Zinc 12

3/21
3

Comp. 365A 10
Rubr. Asbestos 20

3/21
4

Moulds Good

Cracked 1st Test. Very hard

Ent'd .M
MAR 21 1911

Comp. 365 A. 10
Asbes-wool
3/21
5

Comp. 365 A. 10
~~Flock~~ 2
Barium Sulphate 24
Moulds Good # 3/21
Good Hard Mass 6 Cracked 2nd test
Requires long mixing

Comp. 365 A 10
Flock 2
Calcium Sulphate 14
Moulds Good # 3/21
Hard Mass. 7 Cracked 2nd test
Don't mix well.

Ent'd .M
MAR 22 1911

Ash wool 1 Part
Pulv. Ash 20 "
Seemed to gather until
the wool no longer hangs
together will calc this
filler 3/22
A

Comp 365 A 10
filler 3/22 17
A
3/22
1

Shell 10
filler # 3/22 16
A
3/22
2

Binder # 3/14 7
2
filler 3/22 13
A
3/22
3

Rec'd MAR 2 1911

Made disk of Plaster # 3/20
for Mr E...
Heated Plaster on steam
Table
Heated Matrix over steam-
table steam at 60 lb
Pressed ½ minute 3500 lb □in.
Cooled off immediately, about
6 minutes. Record made —
The Plaster did flow well
and form well on surface Equal
to original Sub-Master

Rec'd MAR 23 1911

Comp. 365 10
Flock 2
Alumin Oxide Magnesium 7

3/23
1

Comp. 365 A 10
Flock 1 3/4
Strontium Sulphate 30

3/23
2

Comp. 365 A 10
Flock 1 3/4
Zinc 2
Strontium Sulph. 25
mix 2, 4 5500 together # 3/23
3

Comp. 365 A 10
Flock 1 3/4
Strontium Carb 28

Moulds Wood- Heard

Comp. 365A 10
Clock 1 3/4
Staurtinum Carbonate 25
Zinc 2

Moulds Good # 3/24 Maximum of filler
1

Comp. 365A 10
Clock 1 3/4
Plumbi Per Oxi Excess 22.

Has Similar action as Zinc. # 3/24
2

Comp. 365A 10
Clock 1 3/4
Plumbi Per Oxi 16

Has greasy feel

Expands Considerable at the last stage of mixing # 3/24 Moulds - Good
3

Has double action

Comp. 365A 10
Clock 1 3/4
Staurtinum Carb. 8
Plumbi Per Ox. 10

3/24
4

Expand at last Stage of mixing
Moulds Good Hard - Tough

Comp. 365A 10
Clock 1 3/4
Barium Carb. 8
Plumbi Per Oxi 10

3/24
5

Comp. 365A 10
Clock 1 3/4
Barium Carb 8
Plumbi Per Oxi 8
Earth 2

Too Heavy with Pigment

3/24
6

Comp. 365A 10
#3/24 Clock 1 3/4
7 mix Barium Carb. 6
Plumbi Per Oxi 8
Earth 2

Comp. 365A 10
3/24 Clock 1 3/4
8 Barium Carb. 6
Plumbi Per Oxi 8
Mixe Earth 4 Try Again

Ent'd
MAR 24 1911

Comp. 365A 10
flock 1 3/4
Plumbi Oxi 3/24
9

Comp 365-A 10
flock 1 3/4
Stibiium Bisulphide 28
Can Carry more Stibnite
about 4 parts # 3/24
10

Comp 365-A 10
flock 1 3/4
Stibium Bi sulphide 10
Zoxi 5
3/24
11

Comp. 365A 10
flock 1 3/4
Manganese Per Oxi 21
Can Carry more pigment
about 4 parts
3/24
12

Ent'd
MAR 24 1911

Comp 365A 10
flock 1 3/4
Stibnite Carb. 14
Manganese per Oxi 16
Looks Good too much Carb. # 3/24
Try again 13

Comp. 365A 10
flock 1 3/4
Stibnite Carb 10
Manganese Per Oxi 20

Comp. 365 A 10
Flock 1 3/4
Baryte 32
Zinc 4

Mixed Green, Annabels Sweet

3/25-
1

MAR 25 1911

Comp. 365 A 10
Flock 1 3/4
Baryte 25
Zinc 6

Smokes Sweet
Soft

3/25-
2

Comp. 365 A 10
Flock 1 3/4
Baryte 20
Zinc 8

The Zincide acts so prominently that the mixture must be worked Rapidly

3/25-
3

MAR 25 1911

Sulphur 5
Flock 1/2
Antimony Pt Sulphide 10

3/25-
4

Sulphur 7
Antimony Pt Sulphide 10
Flock 2
Zinc 2

3/25-
5

Comp. 365-A 10
flock 1½
Lead Per-Ox 8
Barytes 5½ ~~4½~~
Pasty enough. # 3/27
1

Comp. 365-A 10
flock 1½
Lead Per Oxi 8
T. E. T. A. 10
3/27
2

Comp 365-A 10
flock 1½
Lead per Oxide 8
Manganese Per Oxi # 3/27 12
3

Mathy 200°F Comp 365-A 10
flock 1½
Stiff Paste Lead Per Oxi 8
Manganese Per oxi # 3/27 12
Carbon Black 4 1

Comp 365-A 10
flock 1½
Strontium Carbonate 8
Mangan per Oxide 10
Leabal per Oxides # 3/27 6

Models Good Comp 365-A 10
Too Soft flock 1½
Lead per Oxi 5
Mix Barytes 5
Strontium Carbonate 5
Zox # 3/27 2
6

Comp. 365-A 10
flock 1½
Fair Lead per Oxi 5
Strontium Carbonate 8
Carbon Black # 3/27 4
7

Comp. 365-A 10
flock 1½
Lead per Oxide 4
Barytes 3/27 28
8

Ent'd .M.
MAR 24 1911

Comp 365 A 10
flock 1½
Manganese per Oxi 12
Carbon Black 4
#3/28
1

Fair- Stiff Paste

Comp. 365 10
flock 1½
Manganese per Oxide 20
maximum

Stiff Paste #3/28
2

Comp 365 A 10
flock 1½
Lead Per Oxide 4
Earth 6
maximum

Stiff Part #3/28
3

Comp. 365 A 10
flock 1½

Ent'd .M.
MAR 29 1911

2 batches

To make thick

Comp 365 A 25
flock 4
Manganese per Oxi 30
Carbon Black 10
Maximum of filler
#3/28
4

Light

3 batches

Comp 365 A 20
flock 3
Manganese per Oxide 54
#3/29
1

Comp. 365 A 15
flock 2 3/4
Manganese per Oxides 18
Carbon Black 6
try later

Shel		8
Tetra. chlor. Nap		2
Flock		1½
Z ox		1
I Earth		1
R. Stone		10
	# 3/29	
	1	

Shel		8
T. C. N.		2
Flock		1½
R. Stone		10
Z ox	# 3/29	2
I Earth		2
	2	

Shel		10
Flock		1½
R. Stone	# 3/29	10
Z ox		1½
I Earth	3	1½

Shel		10
Flock		1½
Barytes		24
Z ox		1½
I Earth	# 3/29	1½
	4	

Shel		10
Flock		1½
Manganese Per Ox		12
Carbon Black		4
	# 3/29	
	5	

Ent'd MAR 30 1911 .M.

The following is a Mech & Plastic made as per the purpose of ascertaining which will bear the greatest scratch resistance

Plain Shellac flock		40 6
	#3/30	

Ent'd MAR 31 1911 .M.

Comp. #365A flock		40 6
	#3/31	

Re- Under the same conditions this Mixes with more ease, but it spreads more, it is more liquid. Consequently could take up more filler

Ent'd MAR 31 1911 .M.

Comp 365A flock		20 3
Barytes Y Earth		50
Lead for Oxide	#3/31	4

Mixes Good and not too stiff Lead should be added after the Barytes & Earth are well incorporated

Scratches Matrix in Moulding.

Comp 365A flock		20 3
Manganese for Oxide		50
Lead for Oxide	#3/31	2

Mixes Good but must be done as Quick as possible because the plaster hardens on the Hot Rolls with time add the lead when the Manganese is well incorporated

Re. Mangan. little in mass - Does not flow enough

Comp. #365A 10
Flock 1/2
Mangan. Borate 10

Euro .M.

APR 1 1911

Conclusions before is allowed to strongly by only. Too much Mang.

#4/1

Comp. 365A 10
Flock 1/2
Mangan. Borate 7
" one part in excess

#4/1
2

Fair
Too much Mang.

[167]

Comp. 365A 10
Flock 1/2
Mangan. Borate 6

Euro

APR 3 191

Very Tough - Cuts to a Shaving

#4/2
1

Comp. 365A 10
Flock 1/2
Mangan. Borate 3
Iron Oxide 12

#4/3
2

Shel 10
Flock 1/2
#4/3
Mangan. Borate 3 3
Iron Oxide 10

Shell 10
Flock 1/2
#4/3
Mangan Borate 0
4

Ent'd .M.
APR 3 1911

Comp. 365A 10
Flock 1½
Iron Oxide 20
Mixes good
Does not have tenacity
Looks good. #4/3
5

Comp. 365A 10
Flock 1½
Manganese Oxide 18
Mixes Good
Moulds Good #4/3
6

Shell 10
Flock 1½
Manganese Oxide 14
With plain shellac will not take more than 14 parts of Manganese Oxide to produce a stiff plastic #4/3
7

Shell 10
Flock 1½
Iron Oxide 20 4/3
8

Ent'd .M.
APR 4 1911

Comp. 365A 10
Flock 1½
Red Lead 64
#4/4
1

Comp. 365A. 10
Flock 1½
Iron Oxide (Brown) 30
#4/4
2

Comp. 365A 10
Flock 1½
Lead Sulphate 64
#4/4
3
Soft—Chalky

Comp. 365-A 10
Flock 1½
Lead Carbonate 64
Mixes good. Does not have tenacity.
Moulds like putty. #4/4
4
N.G. Very soft

Rec'd M.
APR 4 1911

Comp. 365A 10
Flock 1½
Manganese Borate 25 maximum
Iron Oxide 16
Does not Mix thoroughly #4/4
5

Comp. 365A 10
Flock 1½
Manganese Borate 2
Iron Oxide #4/4 20
6

Mixes with some difficulty does not stick to the Rolls. Stiff Mass. Mould with extra pressure.

Comp. 365 10
Flock 1½
Manganese Borate 2
Iron Oxide 16
Heat the flock & pigment before mixing. #4/4
7

Mixes good - Moulds good.
Looks good

Rec'd M.
APR 4 1911

Comp. 365A 10
Flock Heated 1½
Manganese Bo. 4
Iron Oxide Heated 16
Mix the Man. Bo. with the Comp.
Mixes good. Just the proper consistancy for good moulding
#4/4
8

Harder & tougher than any samples yet.

It's softer than Condensite but best yet, you must increase the iron very much to get more power on your mixing rolls as you can work a very much stiffer dough.

Edison

Ent'd APR 5 1911 .M.

Shellac 1.0
Sulphur 1.0
R. Rubber 1 1½
Portion of the mass crystalized

Mixture will not harden N. G.

Comp 365 A 1.0
Flock 1½
Manganese Borate (Heated) 4
Iron Ox. #4/5 18
2

Mix Mangan. Bo. with Comp. then add Flock (Heated)

Comp 365 A 1.0
Flock 1½
Mangan. Bora. 4
Antimony Sulphid 4
Iron Oxide #4/5 14
3

Stiff mass.

Ent'd APR 5 1911 .M.

Comp 365 A 1.0
Flock 1
Mangan. Bora. #4/5 4
Antimo. Sulphid. 4 4
Iron Oxide 16

When mixture becomes too stiff to operate add a very little Sump. It has the desired effect, the mixing can then go on.

Comp 365 A 5
Flock ¾
Mangan. Bora. 2
Antimo. Sulphid #4/5 2
Iron Oxide 5 12

Cold Sump.
Would not take all the Flock and remain plastic. Placed the crumbs on Steam table + would not become plastic. Placed the crumbs into the Mathiy and applied extra pressure. Result is not good material is not compact

Ent'd .M.
APR 5 1911

Comp. 365A		10
Flock		1½
Mangan. Boric	#4/6	4
Artillo Sulpha		4
Iron Oxide		20

Mix as follows: Comp. Flock, Iron Oxi & Mang. Bor. Grind all the Borate can be taken up. add little Naph. about 1/32 of an ounce. the mass thin works very stiff, but holds shape better to moulded goods

Ent'd .M.
APR 6 1911

Comp. 365A		10
Flock		1½
Litholine		28

Too much Litholine. the mass crumbles on the Rolls & will not mix properly. pressed the crumbs, which are soft enough, but no tenacity.

#4/6
1

Comp. 365A		10
Flock		1½
Iron Oxide Heated		10
Mangan. Boric		4
Litholine (Heated)		12

Add little Naphthalene to finish the Mixing 1/4 part in this Case.
Hard & Tough but Will Try to Mould Smooth

#4/6
2

Shel		10
Flock	Looks Good	1½
Naphthalene		3½
Iron Oxide	#4/6	10
Mangan. Bo		4
Litholine	3	12

Mixes good. Moulds good.

Entd APR 6 1911 .M.

Looks Good

Shel -		10
Flock		1½
Napthalene		5
Iron Oxi	#4/6	10
Mangan. Bora.	4	4
Lithophone		16

Mixes Good. Moulds Good. Different operate quick, the mass dries rapidly after mixed

Shel		10
Flock		1½
Napthalene	#4/6	5
Iron Oxide	5	10
Lithophone		26

Compound with above formula. By taking out the 4 Parts of Mangan. Bora. and adding 10 more parts of Lithophone the mass is just as much plastic in the milling. But it is noticeable that the mass is not quite so tenacious.

Entd APR 6 1911 .M.

Hardest sample to date

Shel		10
Flock		1½
Napthalene	#4/6	8
Iron Oxide	6	10
I. Earth		10

Crumbles in the Rolls, there is too much Earth. Placed the Crumbs in water and applied extra pressure

Entd APR 7 1911 .M.

Shel		10
Flock		1½
Napthalene		5
Iron Oxide		10
I Earth		6

1st Power Mixing Works Good-better mixture

	#4/7	
	1	

Shel		10
Flock		1
Napthalene		5
Iron Oxide	#4/7	14
I. Earth	6	6
Mix Nap. with Earth & Iron	2	

Ent'd .M.
APR 7 1911

Shel		10
flock		1
Naphthalene	#4/7	6
Iron Oxide		16
I. Earth	3	6

Mathy was too Hot which caused the Blister upon the Surface ——— Can carry more pigment.

Shell		10
flock		1
Naphthalene		6
Iron Oxide		20
I. Earth	4/8	6

Ent'd .M.
APR 8 1911

4

Mixes Good. must too Stiff to Mould in practice. Mass dont resist Scratch more than above formula.

Shel -		5
flock		1/2
Naphthalene	#4/8	4
Iron Oxide		10
I. Earth	2	3

Mixes Good. Moulds Good. Looks good

Ent'd .M.
APR 8 1911

Shel		5
flock		1/2
Naphthalene		4
Iron Oxide	#4/8	10
I. Earth	3	3
Scrap		10

Mixed in 5 minutes, Moulds good

For Disk Moulding

Shel		20
flock		2
Scrap		20
Iron Oxide	#4/8	40
I. Earth	4	12
Naphthalene		16

Maximum of Pigment makes Stiff Mass.

Boro

APR 10 1911

Comp. 365A 20
Flock 2
Iron Oxide 50

#4/10
1

Made Brick did not have enough Plastic to fill Matrix — Contains the Maximum amount of Pigment. Record Surface Good Pair. Play 4 Times

Comp 365A 10
Flock 1½
X' Near white Pigment 4½
Same Percentage Pigment

#4/10
3

Too Soft

Boro

APR 21 1911

Shell — 17
Flock 4
C. Clay 5
Rotten Stone 15
K. Black 4½

#4/11
1

Smiles. Very nice & moulds Easy. This is supposed to be the Reg. Brick Plastic. Material Question Light.

Shell 15
Flock 4
C. Clay 5
Rotten Stone 15
K. Black 4½

#4/11
2

Harder & tougher than #1. Moulds Good

Shell 10.
Flock 1½
I Earth 8½
Plaster 2

#4/11
3

Long Jointing Stiff Mixes. Moulds only with Extra pressure. Stone not moulds compact. Hard & tough

Ent'd .M.
APR 11 1911

Shel 10
Flock #4/11 1½
Iron Oxide 4 10
Manganese Per Oxide 15
Mixes good & moulds good

Shel 10
Flock #4/11 1½
Iron Oxide 5 15
Manganese Per Oxide 10
Mixes good little stiffer rolled
when heated moulds a little dryness
required to mould
Can't notice any difference in quality

Shell 10
Flock ½ 1½
Aluminum Hydrate 10
" Chloride ½
Dry's nicely quickly and takes
a long time to set

Ent'd .M.
APR 12 1911

Shel #4/12 10
Flock 1 1½
Iron Oxide 8
Manganese per Oxide 10
~~Zinc~~ 3
Mixing in 15 minutes, found to be
too dry, try again 10 minutes

Shel 10
Flock 1½
Iron Oxide 8
Manganese per Oxide 10
~~Zinc~~ 3

Shel #4/12 5
3 ½
Manganese Acetate
Combines by [illegible] a Dark Reddish mass
a shade Harder than Plain Shellac
Mixes with Tetra-Chlo-Nap with
Quick stirring — softens it, softer #4/12
than Plain Shellac 4
Melt in Carnival to boiling point of Shellac
for 10 minutes

Shellac 5
Cresotinic Acid 1
Ent'd .M. melt together to dissolving of Shellac
APR 12 1911 Coagulation quickest then
with less Cresotinic Acid, until Shellac
more to me a little softer than Shellac
as Shellac #4/12
4

Shellac 5
Burnt Aluminum 1
Combine to form a mass the
Color of Iron Filings, powders, Hard
& Brittle, If mixed in the Rubber the
possibility only to allow each other
to pigment Powdered #4/12
6

Plain Burnt Aluminum will become
Plastic enough to take sharp impression -
It is Hard as Shellac but not as tough.

Experiments to Toughen & Harden Shellac.

Ent'd .M. Shellac 10 parts
APR 13 1911 Cresotinic Acid 1 "
Melt in Casserole Temp. 290° #4/13
Condenses in 5 minutes 1
As Hard as Shellac - More tenacious

Plain Shellac treated same temps will not condense in 5 minutes.

Shellac 40 parts
Cresotinic Acid 1 "
Heated 275° 5 minutes makes
V Shellac not so brittle - no harder
added more Cresotinic Acid 1 "
10 min. Notice no difference in Hardness
added More Cresotinic Acid 1 "
15 Min. Notice no difference in Hardness
added more Cresotinic Acid 1 "
15 min. Condenses.
Notice no difference in Hardness -

RECEIVED
APR 13 1911
Date M.

Shellac 20
Rosolic Acid 1
Heated to melting of Shellac
Condenses at once with
Evolution of gases. produces
a mass little thicker than Shellac
but more brittle

Shellac 40
Rosolic Acid 1
Melt Shell. Add Rosolic 270°
does not gas as much as plain Shell.
the Sample shows to be same as plain
Shell. 10 minute heating swells
The mass and thickens. Sample
shows slightly tougher than plain Shell.
N minutes heating the mass is too
thick to stir. The Result is a very
slight gain in toughness. but no harder.

#4/13
2

Shellac 20
Hydroquinone 1
The two combines to produce a
mass little tougher than Shellac but
no harder. has the advantage of
Melting more liquid than plain Shellac.
Added more Hydroquinone 1 Part
which renders it still more liquid and
toughens the mass a little and looses in
hardness. Added Rosolic acid 2 parts
Condenses at once, renders the mass
slightly more brittle and a shade softer

#4/13
3

Rec'd
APR 14 1911

Shellac	20
Phenylenediamine	1

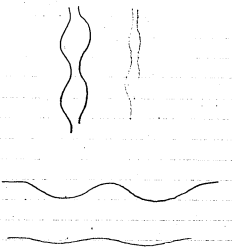
Condenses at once, swells up to make it unable to pour off.

Shellac	40
Hydrogenizone	2
Phenylenediamine	1

#4/14/1 Mixture resists scratch about the same as Shell but not so brittle, would mould good. The addition of pigments may improve the hardness.

Shellac	10
Benzal Chloride	1/2

Melt, renders Shell more liquid, Sample shows no harder, but slightly more compact, carrying less air bubbles added more Benzal Chloride 1/2 and Condenses the mass so it will not pour off. Dont resist scratch more than plain Shellac.



Entd M. APR 22 1911

Coated 8 B lanks with formula E.2064 Temp. at Joint was raised to 300° F. coated 2 Blanks lower Temp to 280° & coated 6 Blanks Dope work good. As good as #365A.

Pressed 5 Record operated Same as with #365A Dope only one turned out O.K. With more practice the difficulties may be overcome The blank should not be made so that before pressing as the #365A. because it cements to the mating.

There will be 8 4/22

Entd M. APR 24 1911

Making 100 Records for Average Test. Started coating 100 Blanks at 3.35. Temp of Dope 300° to 280°. Finished at 5.15°

Entd M. APR 25 1911

After inspection of the Blanks found one that will probably not record on good record. 3 of them are cracked.

The Blanks were all Coated at the rate of one per minute Could have increased that speed if the Dope had melted quicker. the live steam was blown through right along and could not make it hotter, But by the addition of fresh Dope for every Blank coated the temperature of the Dope was keeped around 280°

Rec'd A.M. APR 2 6 1911

Moulding the 100 Records
Temp of brass 148° to 149° F.
The Blanks remains therein 40 minutes
The matrices are made about
125° Hot. Place in press
apply pressure just a little
as the gauge will register for
about 10 minutes then 1400 or 1500
and right away turn on Cold air
to chill the Matrix & Record.
The Records are so moulded
at 6 to 7 minutes interval.

Expert inspection of the 100
Records shows as follows

O.K.	Blisters	Pin Holes
82	2 3	6

Streaks	Digs	Blind Spots
4	8	18

Cracked
9 — total 100

Rec'd A.M. MAY 1 1911

Altered the Moulding
Expander Device so that
the Blanks will warm
and play when ready for
moulding so as to allow
for Air Escape.
Gauged all the Blanks
to equal length.
Coated 61 more Blanks
operated same as for
last ahead of this one.
Coated 15 Blanks that are
parallel on the Bar.
The gate of the melting Pot on
the coating machine is .005
Rollers which allows "
thick coating for the first
layer. This experiment has
shown definitely that such
thickness of coating for the
first layer will eliminate
Blisters. the whole 15
contained Blisters.

Ent'd M.
MAY 2 1911

Moulding Records with the 61 Blanks of yesterday.

Applied 1800 lbs pressure and the last 20 Records and the result was less defectives.

Exper inspection of the 61 Records shows as follows

O. K.	Blisters	Blind Spots
18	19	1

Digs & Pin Holes		
17	2	total 61

Ent'd M.
MAY 4 1911

Altered the lip of the Coating device gate to a wedge shape as follows

The object is to lay the ~~Dope~~ more uniform, particularly to prevent dragging of particles which causes streaks and pin holes just where the particle is arrested.

Entd ...M.
MAY 5 1911

Coated 40 Blanks with improved coating device. The surface of all the blanks is an improvement. The wedge-shape lip of the gate does not drag the particles nearly as much as before when the gate lip was sharper. All of the 40 blanks are as near perfect as possible to be practicle.

Moulding the above blanks.

Entd ...M.
MAY 9 1911

Made Dope as follows.

Chloro-Nap- 8 parts } 5/9/11
Benzamide 1 " }
Melt & pour off- 1

5/9/11 — 1 Part
Button Lac 3 "
Little Black aniline Color (Fat)
Makes good liquid comp. not quite so hard as # 364 A
But tough. Contains some Bubbles.

Benzamide is expensive
Coating 45 marks per Kilo —

Coated 10 Blanks with Dope Made by "Jones". Called B 3 to 1. with Button Lac washed in Boiling water for a considerable time. The blanks showed no blisters nor was there any difficulty in laying the Dope.

Records pressed— The Dope was of such low melting point that it did stick to the Matrices so much that a perfect record was only accidental & such records were too soft & pasty.

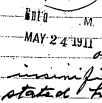
Coated 10 Blanks with "Jones" Dope called B 4 to 1 with Button Lac. Remarks for the Exp. of yesterday apply with to this batch. I expect that the Dope was a shade harder.

Coated 10 Blanks with "Jones" Dope Called B 5 to 1. This Dope is fluid enough to lay properly. Contains some Bubbles. (Smoke ones) which caused pin-Holes upon the blank Surface and are not altogether eliminated. Records Pressed are good - only one Blister out of the 10 Records Surface covered with tiny pin Holes which showed on the Blanks.

May. 24th Inspection shows 2 Blistered Records, Dope Harder.

Coated 10 Blanks with Jones' Dope S. 31 Dope did not lay quite smoothly; was too thick on after short heating. Probably would thicken too soon for practical use. (try larger lot) 2 Blanks were not smoothly coated. Records press out good. All the Blanks were flamed — May 24th Inspection shows 1 Blistered Record. Dope handed —

Made 20 Records with Jones' S. 2.5.1 Dope — Coating of the Blanks appeared without difficulty. Dope shows no indication of condemning any reason when # 365A. The addition of fresh quantities from time to time helps it typical enough. All the Blanks were flamed and the blanks were wiped off on surface before moulding



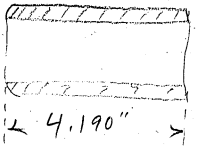
Expert Inspection shows 3 Blistered Records out of the 20 the Blisters are only one on each Record and so insignificant that Mr Edison stated he would pass them

Rec'd MAY 25 1911 .M.

Made New Records by the Spinning Method in the following manner.

Pulverize #365A Dope, put into a hot matrix a sufficient quantity to form a thin layer & the matrix is revolved to cause the Dope to lay even, in a few seconds that is accomplished then pour in the Montana Mixture to form the Backing, when sufficiently cool the Record Contract out as easily as the Pressed Record or the Regular Montana "

The Success of this method, which I've been told, has proven true by Mr. Cook & others with Flat Records is particularly true to Manipulation the Matrix must not be made so hot to cause the Powdered Dope to Cement to it, the Dope must not be made very Fluid — simply enough to lay evenly with centrifugle — the centrifugal action forces the Dope on the matrix face and drives out the air — since it is lighter than the Dope, the Speed of the Matrix is an important factor, I have obtained different results with different Speeds to lay the powdered Dope evenly the Matrix must revolve slowly at first then slowly increased, before the Dope begins to crystalize the Backing Mixture is poured in, this mixture need be only fluid enough to run nicely — this is very promising, the only fault at present seems to be that the Dope is not pulverized fine enough — which causes a pitted surface Record —


4.190"

[ITEM FOUND IN BOOK]

Cresotinic acid & Shellac

Rosolic acid instead of Shellac also in a mixture with Shellac

X Hydrochinon & Rosolic acid
Extremely hard when you get right proportion

Rosolic acid & Paraphenylindamine
Very hard when in right proportions

X
Rosolic acid & Amidophenol

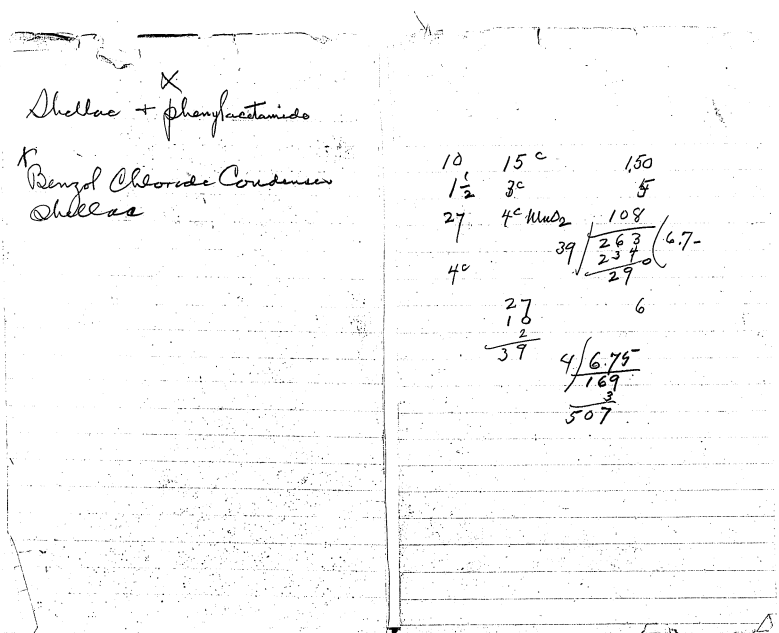
Barium Peroxide –

Ferric Oxide

Lead peroxide –

Manganaese peroxide –

[ITEM FOUND IN BOOK]



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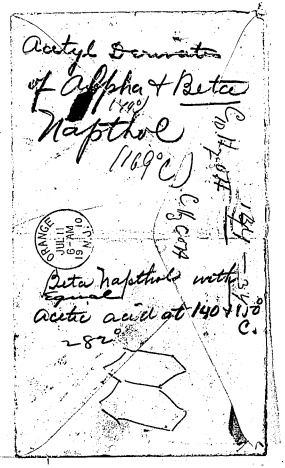

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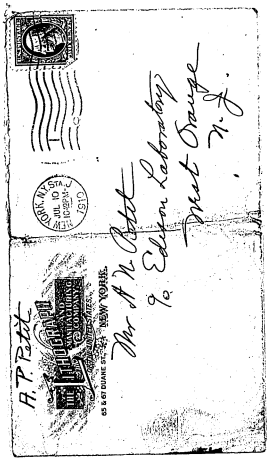
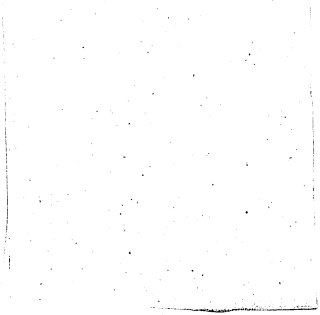


[ITEM FOUND IN BOOK]

Rosin
accounts

3 00
1 00



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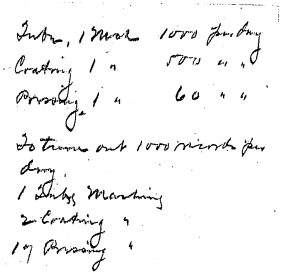
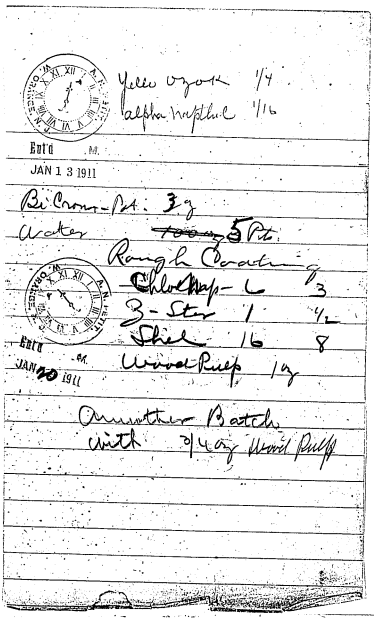

Lubr., 1 Mach 1000 pieces/day
Coating 1 " 1000 " "
Pressing 1 " 60 " "
To turn out 1000 Micrits per
day.
1 Lubg Machine
2 Coating "
10 Pressing "

[ITEM FOUND IN BOOK]



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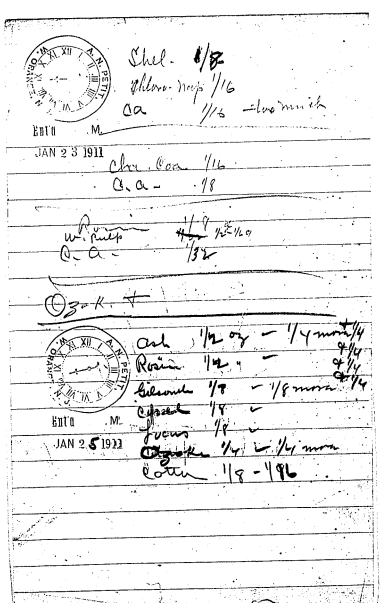
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